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CLAIMS 1-4, 13-25 ARE CANCELLED BY PRE-Amdt DEVICE CLAIMS REMAINED.

CLAIMS

1. A method of manufacturing a semiconductor device, comprising the following steps of:

forming a first film and a second film at a plurality of regions on a substrate at which gate electrodes are to be formed;

removing the first film and the second film from at least one of said plurality of regions; and

forming a first insulator film and a first gate electrode at said at least one of said plurality of regions from which said first film and said second film have been removed.

Cancelled See Cover letter 10/7/02

2. A method according to claim 1, wherein

said step of forming the first film and the second film comprises the sub-steps of:

forming a second insulator film surrounding said plurality of regions, said second insulator film having an upper surface located at a level lower than an upper surface of said second film;

forming a third film on the second insulator film;

removing a part of the third film, thereby leaving the first film and the second film on said plurality of regions and leaving the third film around said plurality of regions; and

forming a source region and a drain region in the substrate, and

said step of forming the first insulator film and the first gate electrode comprises the sub-steps of:

forming a third insulator film at the regions from which the third film have been removed; and

forming the first gate electrode on the first insulator film and above the region from which the first insulting film and the second film have been removed,

whereby the first gate electrode is formed above said at least one of said plurality of regions, and a second gate electrode made of the second film is formed above a region other than said at least one of said plurality of regions.

3. A method according to claim 2, wherein the step of forming the first insulator film and the first gate electrode includes sub-steps of removing the other parts of the third film being left and forming a conductive film on the regions from which the other parts of the third film have been removed, the conductive film connecting the first gate electrode and the second gate electrode.

4. A method according to claim 3, wherein the sub-step of forming the conductive film forms the conductive film such that the conductive film contacts sides of the first and second gate electrodes.

5. A method according to claim 3, wherein said sub-step of forming the conductive film removes upper

parts of the first and second gate electrodes, along with the other parts of the third film being left, and then forms the conductive film on the regions from which the upper parts of the first and second gate electrodes have been removed such that the conductive film connects an upper surface of the first gate electrode and an upper surface of the second gate electrode.

6. A method according to claim 2, wherein the step of forming the first film and the second film comprises sub-steps of:

forming the first film on the substrate and forming the second film on the first film;

removing a part of the first film and a part of the second film from a region other than the plurality of regions;

forming the second insulator film in the region from which the part of the first film and the part of the second film have been removed; and

etching an upper part of the second insulator film to a level lower than the upper surface of the second film.

7. A method according to claim 1, in which said step of forming the first film and the second film comprises the sub-steps of:

forming a second insulator film surrounding said plurality of regions, said second insulator film

having an upper surface located at a level lower than an upper surface of said second film;

forming a third film on the second insulator film;

removing parts of the third film, thereby leaving the first film and the second film on said plurality of regions and leaving the other parts of the third film around the regions; and

forming a source region and a drain region in the substrate, and

said step of forming the first insulator film and the first gate electrode comprises the sub-steps of:

forming a third insulator film on the regions from which parts of the third film have been removed;

forming the first insulator film in the region from which the first insulting film and the second film have been removed; and

forming the first gate electrode on the first insulator film, and

which further comprises a step of removing the first film and second film from the plurality of regions except at least one of said plurality of regions, thereby forming a fourth insulator film on the regions from which the first film and second film have been removed and forming a second gate electrode on the fourth insulator film,

wherein the first gate electrode is formed above

said at least one of said plurality of regions, and the second gate electrode is formed above a region other than said at least one of said plurality of regions.

8. A method according to claim 7, wherein the step of forming the first insulator film and the first gate electrode includes sub-steps of removing the other parts of the third film being left and forming a conductive film on the regions from which the other parts of the third film have been removed, the conductive film connecting the first gate electrode and the second gate electrode.

9. A method according to claim 8, wherein the sub-step of forming the conductive film forms the conductive film such that the conductive film contacts sides of the first and second gate electrodes.

10. A method according to claim 8, wherein said sub-step of forming the conductive film removes upper parts of the first and second gate electrodes, along with the other parts of the third film being left, and then forms the conductive film on the regions from which the upper parts of the first and second gate electrodes have been removed such that the conductive film connects an upper surface of the first gate electrode and an upper surface of the second gate electrode.

11. A method according to claim 7, wherein the step of forming the first film and the second film

comprises sub-steps of:

forming the first film on the substrate and forming the second film on the first film;

removing a part of the first film and a part of the second film from a region other than the plurality of regions;

forming the second insulator film in the region from which the part of the substrate, the part of the first film and the part of the second film have been removed; and

etching an upper part of the second insulator film to a level lower than the upper surface of the second film.

Sub a'

12. A semiconductor device comprising:

a substrate;

first and second gate insulator films formed on the substrate, the first and second gate insulator films having different thickness and/or being made of different materials; and

first and second gate electrodes formed on the first and second gate insulator films, the first and second gate electrodes having different thickness and/or being made of different materials, wherein a sum of heights of the first gate insulator film and the first gate electrode equals to a sum of heights of the second gate insulator film and the second gate electrode.

13. A method according to claim 1, wherein the step of forming the first film and the second film includes sub-steps of:

forming the first film and the second film on an entire surface of the substrate;

forming a third film on the second film;

patterning said plurality of regions, thereby forming a dummy wiring section; and

forming an insulating layer surrounding the dummy wiring section, and

said step of forming the first insulator film and the first gate electrode comprises the sub-steps of:

masking said plurality of regions, except at least one region, and removing the first film, second film and third film from said at least one of said plurality of regions; and

forming the first insulator film and the first gate electrode on said at least one of said plurality of regions, from which the first film, second film and third film have been removed.

14. A method according to claim 13, wherein said step of forming the first film and the second film comprises the sub-step of ion-implanting impurities by using said dummy wiring section as a mask, thereby forming a source region and a drain region.

15. A method according to claim 13, wherein said step of forming the first film and the second film

comprises the sub-step of forming a second insulator film at side walls of a composite film composed of the first film, third film and fourth film, after said plurality of regions have been patterned.

16. A method according to claim 13, wherein said sub-step of forming the insulating section around the dummy wiring section forms a third insulator film on the substrate and performing chemical mechanical polishing on the third insulator film by using the third film as a stopper.

17. A method according to claim 13, wherein said sub-step of forming the first insulator film and the first gate electrode forms the first insulting film on the region from which the first film and second film have been removed, forms the first gate electrode on the substrate and performs chemical mechanical polishing on the first gate electrode, thereby leaving the first gate electrode on the region from which the first film and second film have been removed.

18. A method according to claim 13, further comprising the step of:

removing the third film from said plurality of regions, except at least one of said plurality of regions, after the first insulator film and first gate electrode have been formed on said at least one of said plurality of regions, forming a second gate electrode on the second film formed on the regions from which the

third film has been removed, thereby forming a first gate electrode made of the first gate electrode on said at said least one of said plurality of regions and forming a second gate electrode made of the second gate electrode on said plurality of regions, except said at least one of said plurality of regions.

19. A method according to claim 18, wherein the step of forming the second gate electrode comprises the sub-steps of:

forming the second gate electrode on the substrate; and

performing chemical mechanical polishing on the second gate electrode, thereby leaving the second gate electrode on the regions from which the third film has been removed.

20. A method according to claim 13, wherein said sub-step of forming the first insulator film and the first gate electrode forms the first insulator film by thermal oxidation.

21. A method according to claim 13, wherein said first insulator film is a deposited film.

22. A method according to claim 1, wherein the step of forming the first film and the second film includes sub-steps of:

forming the first film and the second film on an entire surface of the substrate;

forming a third film on the second film;

patterning said plurality of regions, thereby forming a dummy wiring section; and

forming an insulating section surrounding the dummy wiring section, and

said step of forming the first insulator film and the first gate electrode comprises the sub-steps of:

removing the first film, second film and third film from at least one of said plurality of regions;

forming the first insulting film on said at least one of said plurality of regions;

removing the third film form said plurality of regions, except said at least one of said plurality of regions; and

forming the first gate electrode on said plurality of regions.

23. A method according to claim 22, wherein said sub-step of forming the first gate electrode deposits the first gate electrode on the substrate and performs chemical mechanical polishing on the first gate electrode, thereby leaving the first gate electrode on said plurality of regions.

24. A method according to claim 13, wherein said sub-step of forming the first insulator film and the first gate electrode performs selective etching on the substrate in an atmosphere containing a mixture gas of hydrogen and water vapor, thereby forming the first insulator film.

25. A method of manufacturing a semiconductor device, comprising the steps of:

forming a first gate insulator film on a semiconductor substrate;

forming a first gate film on the first gate insulator film and forming a second film on the first gate film, thereby forming a composite film composed of the first gate film and the second film;

patterning the composite film, thereby forming a plurality of regions where gate electrodes are to be formed;

forming an insulating section surrounding said plurality of regions;

masking at least one of said plurality of regions and removing the second film from said plurality of regions, except said at least one of said plurality of regions; and

forming a second gate film on said at least one of said plurality of regions, from which the second film has been removed.

26. A semiconductor device comprising:

a semiconductor substrate;

a first transistor formed in a surface region of the substrate and including a first insulator film and a first gate electrode;

a second transistor formed in a surface region of the substrate and including a second insulator film and

a second gate electrode; and

a connection section formed on the substrate and between the first and second gate electrodes and electrically connecting sides of the first and second gate electrodes,

wherein said first and second insulator films constitute a set and said first and second gate electrodes constitute another set, elements of at least one of the two sets are different, said first and second insulator films are different in at least one of thickness, material and material composition, said first and second gate electrodes are different in at least one of material and material composition and a part of a side of the first gate electrode is connected to a part of a side of the second gate electrode.

27. A semiconductor device comprising:

a semiconductor substrate;

a first transistor formed on a first region of the substrate and including a first insulator film and a first gate electrode; and

a second transistor formed on a second region of the substrate and including a second insulator film and a second gate electrode, said second region being adjacent to the first region,

wherein said first and second insulator films constitute a set and said first and second gate electrodes constitute another set, elements of at least

one of the two sets are different, said first and second insulator films are different in at least one of thickness, material and material composition, said first and second gate electrodes are different in at least one of material and material composition and a part of a side of the first gate electrode is connected to a part of a side of the second gate electrode.

28. A device according to claim 27, wherein said part of the side of the first gate electrode and said part of the side of the second gate electrode are substantially perpendicular to a surface of said semiconductor substrate.

29. A device according to claim 12, wherein at least one of said first and second gate electrodes is formed by a damascene gate process.

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